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Kuntz

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[54] **BOOT AND GLOVE DRYING APPARATUS**

[76] Inventor: **Donald J. Kuntz,** 361 Sullivan Rd., Aurora, Ill. 60504

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[52] **U.S. Cl.** **34/104,** 34/151, 34/239

[51] **Int. Cl.** **F26b 25/00**

[58] **Field of Search** 34/91, 92, 104, 151, 163, 34/232, 239

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Primary Examiner—Kenneth W. Sprague
Assistant Examiner—James C. Yeung
Attorney, Agent, or Firm—Hill, Sherman, Meroni, Gross & Simpson

[57] **ABSTRACT**

A boot and glove drying apparatus including an axially extended hollow main member, means supplying drying air, such as moving heated air to the main member and a plurality of hollow branch members attached to the main member and in direct air communication with the interior of such main members so that when boots, etc. are positioned on the branch members air is circulated within the boot to dry the same.

10 Claims, 9 Drawing Figures

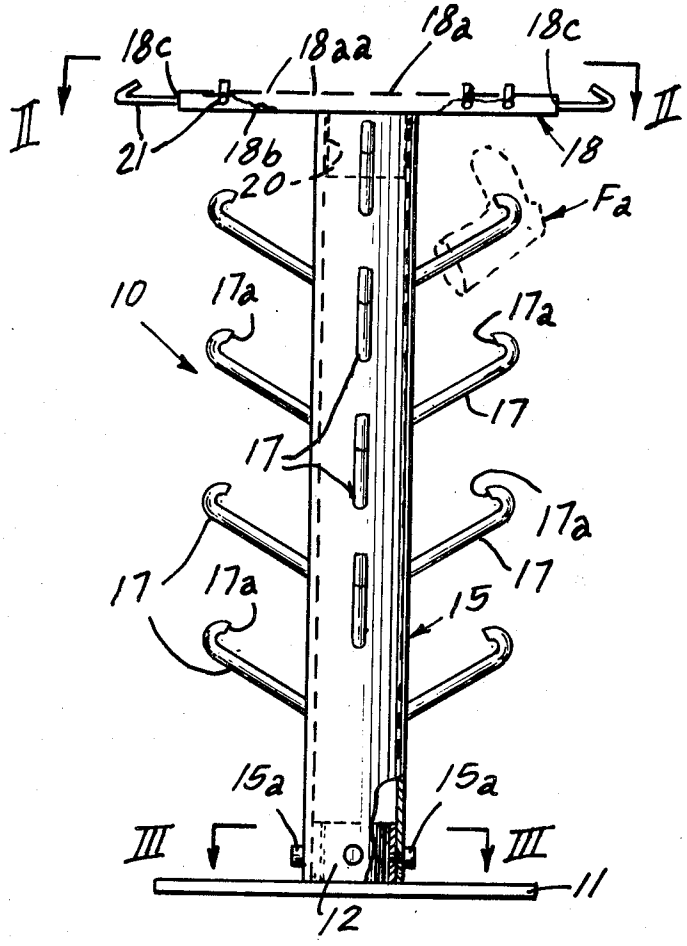


Fig. 2

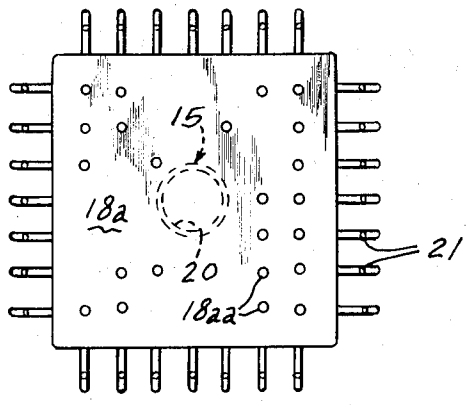


Fig. 1

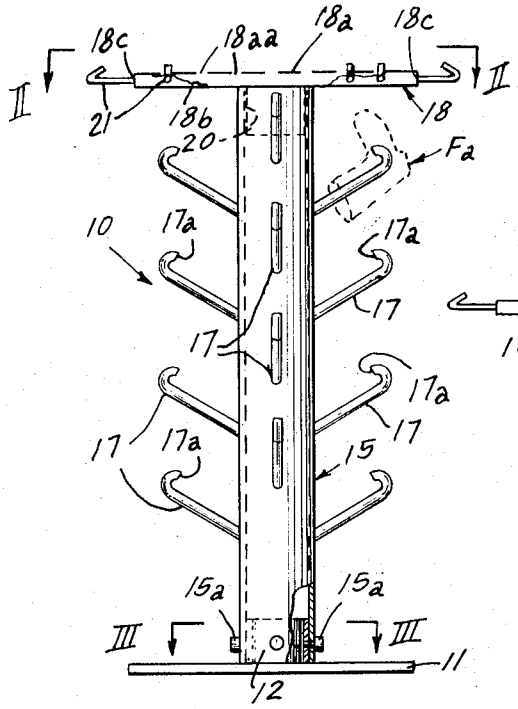


Fig. 4

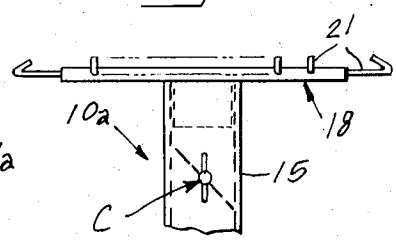


Fig. 3

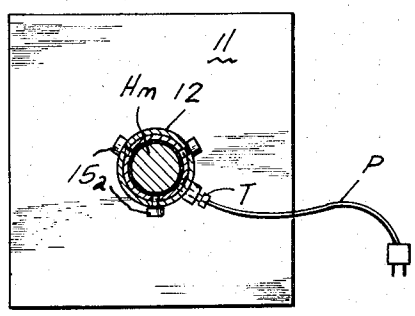


Fig-5

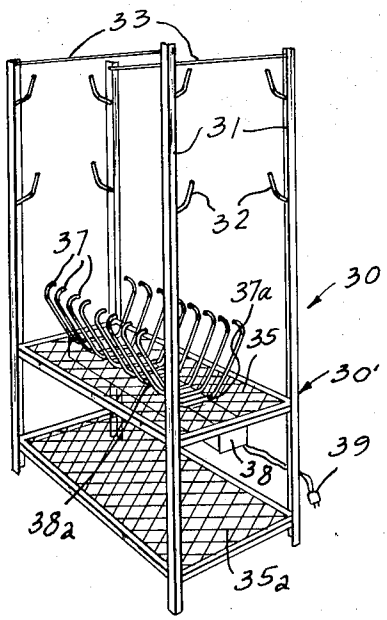


Fig-6

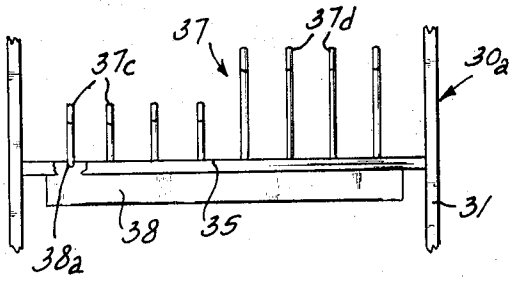


Fig-7

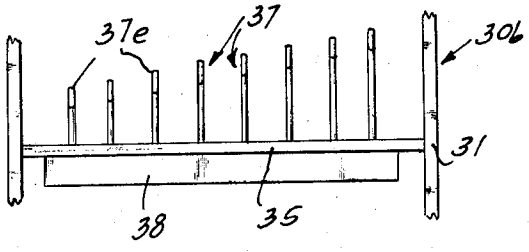


Fig-8

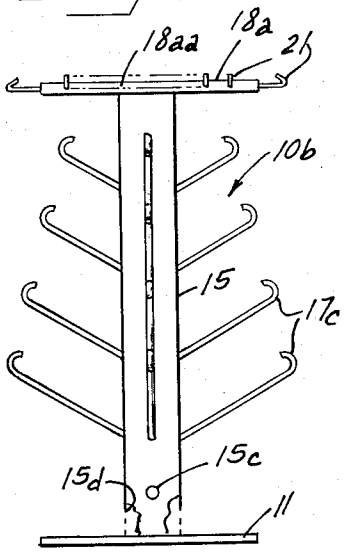
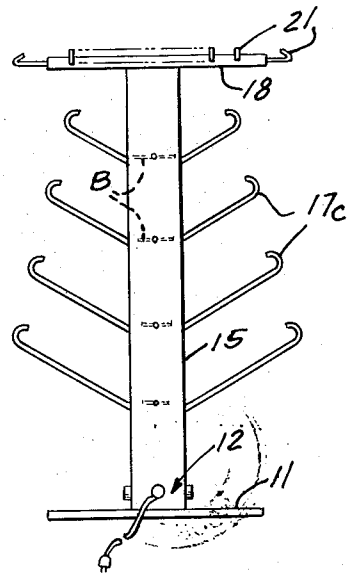


Fig-9



BOOT AND GLOVE DRYING APPARATUS

BACKGROUND OF THE INVENTION

1. Field of the Invention

The invention relates to clothes drying and organizing apparatuses and more particularly to an apparatus for drying and orderly storing boots, gloves and related apparel.

2. Prior Art

As is known, boots, gloves and related apparel become moist or wet from perspiration and/or inclement weather so that upon removal, such apparel must be dried and stored for future use and easy access. When a large number of such articles of clothing must be simultaneously dried, a large capacity drying means must be provided and an unsightly scattering of such articles of clothing about a heating duct, a radiator or other conventional drying means results, particularly when children or other non-responsible persons are involved. Boots, gloves and other like apparel are difficult to thoroughly dry in a relatively short period of time because their interiors are not readily ventilated and/or exposed to air for removal of moisture. Some apparatuses are known for drying a single pair of boots or the like, however, they are at best limited utility and do not alleviate the problems of orderly storing a plurality of such apparel so as to be readily accessible for future use. Storage racks or the like do not thoroughly dry apparel placed thereon.

Accordingly, it is highly desirable to provide an economical, large capacity apparatus for drying and orderly storing boots, gloves and related apparel that is safe and readily utilizable by anyone, including children.

SUMMARY OF THE INVENTION

The invention provides an apparatus for drying and orderly storing a plurality of boots, gloves and related apparel. The apparatus generally comprises a base member having a hollow portion, means for supplying drying air to such hollow portion, such as an electrically operated heating element positioned within the hollow portion, or a conduit interconnecting the hollow portion with a source of circulating air, such as a heating duct or the like; a plurality of somewhat J-shaped auxiliary tube members attached and extending from the periphery of the hollow member for directing the drying air from the interior of the hollow member to the open ends of the auxiliary tubes. In certain embodiments, the apparatus includes a flat cap-like member that fits onto the hollow portion and has a perforated upfacing surface and a plurality of projecting hooks along the peripheral side surfaces thereof. In certain other embodiments, the apparatus includes a support rack for the hollow portion and associated elements. The rack includes storage shelves and hooks. Boots, shoes and similar apparel are individually placed on the auxiliary tubes for drying from the interior thereof and gloves, hats and similar apparel are also placed on the auxiliary tubes or on the perforated upfacing surface of the cap-like member on the shelves for conventional drying. Coats, scarves and similar apparel are hung from the projecting hooks. In this manner, related apparel is quickly and thoroughly dried, orderly stored at a single location and are readily available for future use.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an elevational view, with parts broken away, of a preferred embodiment of the invention;

FIG. 2 is a top plan view taken along line II—II of FIG. 1;

FIG. 3 is a bottom sectional view taken along line III—III of FIG. 1;

FIG. 4 is a partial elevational view of another embodiment of the invention;

FIG. 5 is a side elevational perspective view of another preferred embodiment of the invention;

FIG. 6 is a partial elevational view of another embodiment of the invention;

FIG. 7 is a partial elevational view of yet another embodiment of the invention;

FIG. 8 is an elevational view of another embodiment of the invention; and

FIG. 9 is a similar view of a further embodiment of the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The invention provides an apparatus for readily drying and orderly storing a plurality of boots, shoes, gloves, scarves, hats and related apparel. The apparatus is economical to manufacture, easy to assemble and is efficient and safe for use by anyone, including children. The invention readily dries the interior of boots, shoes, gloves and like articles having hidden recesses in a short period of time to render the same ready for comfortable and sanitary future use. While the invention has many obvious uses in a home, it also has uses in large institutions, for example such as in an army barracks whereat it can be positioned at a given location to dry, sanitize and orderly store for further use the shoes, boots, etc. of the personnel residing at such location. Similary, the invention can be provided in commercial establishments, such as a ski lodge or the like, to dry out customers boots, etc. and make the dried boots readily available for future use.

As shown at FIG. 1, one embodiment **10** of the invention comprises an apparatus having as main components thereof a base member **11**, a vertically extending main tube member **15**, a plurality of auxiliary members **17** and a flat cap-like member **18**.

The base member is preferably a regularly shaped plate of a size sufficient to stably support the apparatus **10** on a floor and prevent it from tipping or the like when it is loaded with apparel. The base member **11** is preferably composed of metal, however, wood, ceramic or other similar material can also be utilized. In an exemplary construction, the member **11** is a 24 x 24 inch square composed of a 10 guage metal. An upfacing hollow stub portion **12** is centered onto the base member **11** and rigidly secured thereto, as by welding or the like. A conventional electrically operated heating means Hm (best seen in FIG. 3), such as a 110 V heating element, is positioned within the hollow stub portion **12** to provide heated air to the apparatus. A fan or the like may be incorporated into the heating means if desired, although it is not necessary. As will be appreciated, heated air will naturally move upwardly so as to circulate within the passage of the apparatus. Further, the amount of heat provided by the heating means H*m* is not excessive so that gentle drying occurs. The heating means H*m* is operationally connected via power

cord P to a suitable source of electrical power. In preferred embodiments, the cord P is provided with a timer mechanism T so that the duration of the heating cycle can easily be regulated.

The vertically extending main tube member **15** fits onto the upstanding stub portion **12** and is secured thereto, as by a pluraity of set screws **15**a. In large installations, it is desirable to include cold air openings along the bottom portion of member **15.** Heated air produced by the heating means Hm is directed upwardly by the interior walls of the main tube member **15.** The main tube member **15** is preferably composed of a relatively thin gauge metal, however, other heat-impervious materials such as certain plastics, ceramics, asbestos, etc. are also useful and can be of any thickness desired. The dimensions of the tube member **15** may be selected in accordance with the proposed use and an exemplary size found convenient for home use, is a 4 foot tube having a 6 inch diameter.

A plurality of hollow somewhat J-shaped auxiliary tubes **17** are attached to the peripheral side walls of tube member **15** so as to extend upwardly at an angle of less than about 90° to such side walls. The auxiliary or branch tubes **17** are in direct communication with the interior of the main tube member **15** so that moving air, which may be heated somewhat above room temperature, is guided therefrom to the open ends **17***a* of each of the auxiliary tubes **17.** In an exemplary construction, short hollow stubs are attached, as by welding, onto the side walls of the tube member **15,** which are appropriately pierced to provide direct communication between the interior of the stubs and the interior of the tube **15.** The open-ended J-shaped auxiliary tubes **17** slip-fit onto the protruding stub portion and may be secured thereto, as by metal screws. This type of construction allows simplified erection of the apparatus by the relatively unskilled user. Of course, the auxiliary tubes **17** may be fastened directly to the main tube **15** if desired. In an exemplary construction, the dimensions of the elongated portion of one of such auxiliary tubes is about 9 inches and the height dimension of the curved portion thereof is about 1 inch. Of course, other sizes are also utilized. In the embodiment here illustrated, all of the tubes **17** are of an identical size, however, as shown in other embodiments their dimensions are variable to accommodate, for example, different length boots.

The flat-cap-like member **18** has a rectangularly shaped cross section with the upfacing surface **18***a* separated from the downfacing surface **18***b* by peripheral side walls **18***c*. The space between the surfaces **18***a* and **18***b* allow the moving heated air to be distributed over the entire surface area and provide substantially uniform heat to the upfacing surface **18***a*. A plurality of substantially uniformly distributed perforations **18***aa* are disposed on the surface **18***a*, allowing the heated air that is conducted upwardly to escape. A depending hollow neck portion **20** is attached to surface **18***b* at the approximate center thereof and fits within the interior of the main tube member **15.** Of course, surface **18***b* has an appropriate opening at its center area so that heated air passes directly from the tube member **15** upwardly through the perforations **18***aa*. A plurality of hooks **21,** such as portions of conventional coat hooks, are attached to the peripheral side walls **18***c* for support of articles of clothing and the like. The cap-like member **18** is preferably composed of metal but other suitable material can also be utilized. In an exemplary construction, the cap-like member **18** is composed of a relatively light gauge sheet metal formed into a 24 × 24 × 3/4 inch box-like configuration and provided with appropriate perforations and hooks as described above.

In the embodiment **10***a* illustrated at FIG. **4,** a damper control means C is provided along the upper portion of main tube member **15** so as to prevent heated air from freely escaping through the cap-like member **18.** The damper control means C insure that sufficient heating air is directed through the auxiliary tubes **17** to completely dry boots or the like positioned thereon. An exemplary form of the damper control means C comprises an appropriately shaped piece of metal or the like and snugly fits within the interior of main tube **15** having an axial shaft connected thereto which protrudes through the side walls of tube **15** for manual and/or automatic pivoting around such shaft so as to partially block the free passage of air within the tube **15.**

The embodiment illustrated at FIG. **5** comprises a rack means **30'** that includes four or more upright posts **31** securely fastened to one another by upper cross members **33** and lower shelf members **35** and **35***a*. The cross members **33** and shelf members **35** and **35***a* are secured to the posts **31** in a suitably rigid manner, as by welding. Each of the posts **31** is provided with a plurality of projecting hooks **32** for support of larger apparel, such as coats, etc. Each of the shelves **35** and **35***a* are preferably formed of expanded metal mesh or the like so as to provide air circulation through such shelves.

An air distribution manifold means **38** is rigidly secured to the underside of at least one of the shelves as **35.** The manifold means **38** generally comprises an axially extending hollow member somewhat in the form of a rectangular box having distribution openings **38***a* such as transverse slots or the like so that drying air provided to the manifold means **38** exits along the upfacing surface of manifold means **38** through such distribution points **38***a*. The manifold means **38** may be provided with an internal heating means, such as discussed in conjunction with embodiment **10** and in such forms includes a suitable electrical cord **39** for providing energy to the heating means. In other forms, the manifold means **38** may be provided with a conduit for connection with a forced air means (not shown). A plurality of auxiliary or branch tubes **37** are secured in working relation above the distribution openings **38***a* of the manifold **38** and each pair of tubes **37** are joined together by a conduit **37***a* so that drying air must exit from the manifold means **38** up through conduit **37***a* and into each of the tubes **37***a* and into the apparel placed on such tubes.

Dried apparel and the like may be stored in an orderly fashion along bottom shelf **35***a* while smaller apparel such as gloves, scarves, etc. may be stored along the upper shelf **35** since a certain amount of the drying air will be available to such shelf area for drying any apparel thereon. As will be appreciated, the apparatus of embodiment **30** may be made of any size desired, such as for commercial or institutional use.

FIG. **6** illustrates an embodiment **30***a* which is somewhat similar to the embodiment **30** in construction, except that the auxiliary tubes **37** are of two distinct sizes. The smaller tubes **37***c* are of a size suitable for regular shoes or children's boots while the larger tubes **37***d*

have a greater length so as to accommodate longer boots.

The embodiment **30***b* illustrated at FIG. **7** is also similar in construction to the embodiment **30** except that the auxiliary tubes **37** are comprised of an individual pair of tubes **37***e* which gradually increase in length to accommodate boots and the like having increased shank portions.

The branch tubes **37** generally comprise two opposing tubes, somewhat similar to tubes **17** in embodiment **10** which are secured along their bottom portions to one another by a flat conduit having an opening along the bottom. In the configuration, a pair of such tubes assume a somewhat V-shaped configuration with the apex of the V being replaced by a flat surface. The downfacing opening of such flat surface is mounted directly above each of the distribution openings **38***a* of the manifold means **38.**

FIG. **8** illustrates an embodiment **10***b* similar in construction to embodiment **10** except that cold air return openings **15***d* are provided along the bottom portion of tube member **15** and a nipple conduit **15***c* is provided for interconnection with a source of moving air, such as a heating duct or the like. In addition, the auxiliary tubes **17***c* are of a varying length so as to provide a somewhat "Christmas-tree" configuration to allow various lengths of boots to be positioned on appropriately sized tubes.

The embodiment **10***c* illustrated at FIG. **9** is also similar in construction to the embodiment **10***b* and includes a plurality of individual baffle means B positioned in the interior of tube **15** above the openings communicating with each set of auxiliary tube members **17***c*. The baffle means B are of a gradually increasing size so that moving air is diverted by each baffle means to its respective set of auxiliary tubes so that a portion of such air is allowed to by-pass the baffle means for the next set of auxiliary tubes and/or the cap member **18.**

In considering the operation of, for example, the embodiment **10,** the apparatus is positioned at a given location and foot apparel F*a* such as one or more pair of boots, shoes, slippers, etc. are individually positioned on each of the auxiliary tubes **17** so that the open ends **17***a* of such tubes are inserted into the remote recesses thereof, as in the toe area of boots or shoes. Other apparel, such as gloves, are positioned on the upfacing surface **18**a and/or hung from hooks **21.** Of course, such other apparel may also be positioned on the tubes **17,** if desired. The heating means H*m* is activated in a conventional manner, with or without simultaneous activation of the timer mechanism T and/or the damper control means C. In a relatively short period of time, all apparel on the apparatus **10** are thoroughly dried and ready for future use. As is recognized, dry apparel is materially more sanitary than moist apparel since germs, fungi and other noxious organisms do not thrive in dry areas. Further, the dried apparel is neatly organized on the apparatus and is readily accessible to a user of such apparel.

In summation, the invention broadly provides an apparel drying apparatus comprised of an axially extended hollow main member, means supplying drying air to the main member and a plurality of hollow branch or auxiliary members attached to the peripheral surfaces of the main member with direct air communication between the main member and the branch members so that drying air passes from the main member to such branch member.

The specific embodiments here described are only illustrative of the invention. Other embodiments, including one-piece construction of the main component, use of other sources of drying air, different shaped auxiliary tubes, etc. are also encompassed by the invention. Various other changes in structure may additionally occur to those skilled in the art; and all of these changes are to be understood as forming a part of the invention insofar as they fall within the true spirit and scope of the appendant claims.

I claim as my invention:

1. A drying apparatus for articles of clothing comprising;

a base member having an upstanding hollow stub portion;

a heating means positioned within said stub portion for providing drying air;

an axially extended tube member mounted at a first end thereof on said stub portion for providing a passage for the drying air provided by said heating means;

a plurality of radially extending auxiliary tube members attached about the periphery of said axially extended tube member, one end of each such auxiliary tube members being in direct communication with the interior of such axially extended tube member and the other end being open to atmosphere so that drying air passes through each of said auxiliary tube members; and

a cap-like member having a perforated upfacing surface area for support of articles of clothing, a hollow interior chamber for distribution of heated air over such surface area and a depending hollow neck portion attached thereto and mounted onto a second end of said axially extending tube member, said cap-like member having a plurality of hooks projecting from its peripheral side surfaces.

2. A drying apparatus as defined in claim **1** wherein the auxiliary tubes are J-shaped, with the curved portions thereof being open to atmosphere.

3. A drying apparatus as defined in claim **1** wherein the heating means is an electrically operated heating element.

4. A drying apparatus as defined in claim **1** wherein some of the branch members are of different length than other branch members so as to accommodate different length apparel.

5. A boot and glove drying apparatus comprising;

a rectangular base portion having an upstanding hollow stub portion attached at a centered area thereof;

an electrically operated heating means positioned within said hollow stub portion;

a vertically extending main tube member having the first end thereof mounted onto said stub portion;

a plurality of auxiliary tube members attached about the peripheral side walls of said main tube member arranged so as to define an acute angle with said side walls, one end of each of such auxiliary tube members being in direct communication with the interior of said main member and the other end thereof being open to atmosphere; and

a cap-like member having a perforated upfacing flat surface area, a hollow interior chamber, one boundary of which comprises said surface area and

a depending hollow neck portion in direct communication with said hollow interior chamber and mounted on a second end of said main tube member, said cap-like member having a pluraity of hooks projecting from its peripheral side walls.

6. A boot and glove drying apparatus as defined in claim **5** including a damper control means positioned below the cap-like member for selectively diverting amounts of drying air to the auxiliary tubes and the perforated upfacing flat surface area of said cap-like member.

7. A boot and glove drying apparatus as defined in claim **5** wherein the plurality of auxiliary tube members comprise a plurality of pairs of tubes, at least one of such pairs being of a length dimension less than the length of at least another of such pairs.

8. A drying apparatus for articles of clothing comprising:

a rack means including a plurality of support posts and a storage shelf means attached to said posts;

a drying air manifold means supported by said shelf means and including a plurality of distribution openings for distributing drying air through such openings;

means for supplying drying air to said manifold means;

a plurality of open-ended conduits supported by said shelf means and spaced from one another;

means for interconnecting each of said conduits with a distribution opening; and

a plurality of pairs of hollow tubes for supporting an article of clothing on a tube, each tube having an inner end for mounting an open end of a conduit and a somewhat curved outer end for fitting within recesses of the articles of clothing placed thereon, each tube of said pair of tubes being joined to an end of one of said conduits so that drying air passes through said manifold distribution openings into the conduits and through each pair of tubes for drying articles of clothing thereon.

9. A drying apparatus as defined in claim **8** wherein some of the plurality of pairs of tube members are of a different length dimension than other pairs of tube members.

10. In an apparel drying apparatus as defined in claim **8** wherein said means for supplying drying air includes a timer mechanism for regulating the heating cycle.

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